Art. III.—*New Species of Australian Chiton from Queensland, Enoplochiton torri.*

By R. A. BASTOW and J. H. GATLIFF.

(With Plates III. and IV.).

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We have received from W. G. Torr, LL.D., of Adelaide, an interesting form of Chiton, which has been obtained on the coast of Queensland, and have placed it, provisionally, in the genus Enoplochiton of Pilsbry's Chitonidae,[1] as that appears to be the best fitted for its reception.

Only one species has been hitherto described, Enoplochiton niger, Barnes, which occurs on the coast of Peru. It is very interesting to find that we have a representative of this rare genus in Australian waters.

The following is the original description of the genus:—

Enoplochiton, Gray.

P.Z.S., 1847, pp. 65, 69, 169.

Valves exposed, of a uniform dark brown or chocolate colour outside and within; the lateral areas and head-valve irregularly studded with extremely minute eyes. Interior minutely laminated and punctate in a peculiar pattern; sinus deep, denticulate. Insertion plate of anterior and median valves slit into teeth and sharply pectinated outside. Tail valve having the mucro posterior and terminal, and inside with a flat ledge of callus in place of the lacking insertion plate. Girdle fleshy, bearing extremely broad and short, blunt, separated, striated scales.

Enoplochiton torri, sp. nov. (Pl. III. and IV., Fig. 1-12).

Description.—Shell oblong, convex, dorsal angle rounded. The whole surface finely pustulated. Colour blackish brown, with

1 Tryon's Manual of Conchology, vol. xiv., pp. viii. and 252.

creamy angular markings at each side of the dark well-defined dorsal triangular area. Girdle alternating blackish brown and creamy, with radiating separated scales.

In perfect specimens the median valves are beaked, and are covered over their whole surfaces with small granulated pustules, for the most part in longitudinal and transverse lines, the diagonal rib not showing very plainly. The triangular patch of colour on the dorsal ridge is evident on all the specimens examined. The anterior valve is pustulated over the whole surface in a concentric manner; the anterior portion of the posterior valve is radially pustulated, and the posterior part is similar to the median valves.

The interior is considerably coloured brownish purple, and the surface finely laminated; the sinus is broad and denticulate; the anterior valve has ten slits, the teeth are long, deep, sharply and closely pectinated outside; the median valves have one slit; there are no slits in the posterior valve, but the posterior edge is strongly denticulate.

The girdle is tough and fleshy, difficult to remove, bearing numerous wide, blunt, striated, separated scales; in the interstices are a few scattered spines.

The head-valve is studded with numerous bright, clear, amber eyes, not ocelli, but real and very human-looking eyes; these also occur on the lateral areas and on the posterior valve. They have optic nerves which can be traced by slightly decalcifying the valve and thus making bare the eye orbit; the nerve threads pass from the eyes to the mantle of the animal, as may be detected by breaking away the teeth from the ventral surface of the anterior valve, the outlets of the nerve threads are then revealed in the caves, just under the tegmentum, and from thence, Mr. Pilsbry informs us, they are connected to the central ganglion. There are also numerous punctures on the ventral sides of the valves, and a multitude of megalopores and micropores visible as very narrow granulated striations over the pustules of the dorsal areas (Fig. 3) with chambers embedded in the shell; these are all similarly connected; it is probable that these latter are also nerve channels for tactile, auditory, or other sense organs. The girdle, with its radially striated

scales, is unmistakably well secured to the very numerous and deeply-cleft teeth in the insertion plates.

Dimensions.—Length, 13.20 mm.; breadth, 10.15 mm.

Locality.—Queensland (Dr. Torr).

Observations.—The genus Enoplochiton, probably the highest form of Chiton life (excepting perhaps Tonicia and Acanthopleura) is new to Australia, and it is one of the most interesting objects in Molluscan development.

The new species is not a typical form, and we have placed it in this genus provisionally, as it has the characteristics of numerous oval eyes and a scaled girdle, but these girdle scales in the Australian species are smaller, much more numerous and closely compacted; and the whole of the dorsal sculpture is granulate; whereas in E. niger the sculpture is incised. The eyes in our species are very much larger.

EXPLANATION OF PLATES III. AND IV.

The following figures of details are from another specimen slightly varying in colouration:—

Fig. 1.—Enoplochiton torri, Bastow and Gatliff.

Fig. 2.—Girdle, dorsal aspect.

Fig. 3.—An enlarged view of one of the eye orbits shown in Fig. 2, also very fine granulation which extends over the whole of the pustules on the valves.

Fig. 4.—Dorsal aspect of portion of anterior valve, tilted up so as to show the teeth. The eyes are .075 x .050 mm.

Fig. 5.—Partially decalcified anterior valve, dorsal aspect, showing eye orbits and optic nerves, also partly eroded teeth.

Fig. 6.—Anterior valve, dorsal aspect, in natural state, showing arrangements of pustules.

Fig. 7.—Anterior valve ventral aspect, showing teeth punctures, slits; part of the teeth are broken away to show the ends of nerve channels, where they connect with the nerve system of mantle.

Fig. 8.—Median valve, dorsal aspect.

Fig. 9.—Median valve, ventral aspect, showing grooves and punctures, also the jagged denticulation of slit and insertion plate.

Fig. 10.—Posterior valve, dorsal aspect.

Fig. 11.—Posterior valve, ventral aspect, with peculiar grooves in eaves, and denticulation.

Fig. 12.—Anterior and aspect of median valve, showing dorsal angle and pectination of sinus.

All the figures are considerably enlarged.